Exhibit 2

UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

NATIONAL ASSOCIATION FOR THE ADVANCEMENT OF COLORED PEOPLE, SPRING VALLEY BRANCH, *et al.*, **Plaintiffs,** **v.** **EAST RAMAPO CENTRAL SCHOOL DISTRICT, *et al.*,** **Defendants.**	**ECF CASE** **Case No. 7:17-cv-08943** **DISTRICT JUDGE CATHY SEIBEL** **MAGISTRATE JUDGE JUDITH C. MCCARTHY**

REPORT OF DR. JOHN ALFORD, PhD.

Scope of Inquiry and Summary of Opinions

I have been retained by counsel for the East Ramapo Central School District as an expert to provide analysis related to *NAACP, et al, v. East Ramapo Central School District, et al*. For this report, I have examined the expert reports provided by plaintiffs' experts Dr. Steven P. Cole, Dr. Loren Collingwood, and Dr. Mathew Barreto. I have provided Ecological Inference analysis, using standard Census Bureau Citizen Voting Age Population (CVAP) estimates provided by the plaintiffs, of past ERCSD elections during the period from 2013 to 2017.[1] I

[1] Earlier in this case, I provided a declaration in support of the District's opposition to the motion for preliminary injunction, as well as an affidavit of direct examination. I reaffirm and adopt the opinions expressed in those documents, and incorporate both the declaration and affidavit of direct examination into this report. My declaration in support of the District's opposition to the motion for preliminary injunction is attached to this report as Exhibit A. My affidavit of direct examination is attached to this report as Exhibit B.

have also attempted to replicate the Ecological Inference analysis produced by Collingwood and Barreto in their report, using Catalist data provided by the plaintiffs, for voting in each of the three 2017 contests. My rate of compensation in this matter is $400 per hour.

Based on my review and analysis of the data provided by Plaintiffs and the reports disclosed by their experts, it is my opinion that the evidence does not support a finding of Black and Hispanic voter cohesion for purposes of the *Gingles* precondition 2 analysis, and that the evidence does not support a finding of legally significant racially polarized voting in the District for purposes of the *Gingles* precondition 3 analysis. I also find it significant that the evidence shows that a majority of White voters in the District have provided cohesive support to White, Black, and Hispanic candidates without variation according to the race of the candidates, as this shows that race is not a factor driving election results in the District. Because the *Gingles* preconditions are not satisfied by the evidence here, I did not extensively consider the Senate Factors. Nevertheless, I do not agree with the opinions they report on the Senate factors because they failed to perform the required "intensely local" appraisal of the facts and circumstances of the East Ramapo Central School District.

Qualifications

I am a tenured full professor of political science at Rice University. In my over thirty years at Rice I have taught courses on redistricting, elections, political representation, voting behavior, and statistical methods at both the undergraduate and graduate level. Over the last thirty years, I have worked with numerous local governments on districting plans and on Voting Rights Act issues. I have previously provided expert reports and/or testified as an expert witness on voting rights and statistical issues in a variety of court cases, working for the U.S. Attorney in Houston, the Texas Attorney General, a U.S. Congressman and various cities and school

districts. I have worked for and with both Democrats and Republicans, liberals and conservatives.

In the 2000 round of redistricting, I was retained as an expert to provide advice to the Texas Attorney General in his role as Chair of the Legislative Redistricting Board. I subsequently served as the expert for the State of Texas in the state and federal litigation involving the 2001 redistricting for U.S. Congress, the Texas Senate, the Texas House of Representatives, and the Texas State Board of Education. In that round of redistricting I provided, at the request of the Federal District Court three-judge panel, a draft of a statewide U.S. Congressional map for Texas that incorporated a set of neural redistricting principles that I had earlier offered the court, and with some modifications by the panel, that map was used for the 2002 Texas congressional elections.

In the 2010 round of redistricting in Texas, I was again retained as an expert by the State of Texas to assist in defending various state election maps and systems, including the district maps for the U.S. Congress, the Texas Senate, the Texas House of Representatives, and the current at large system for electing Justices to the State Supreme Court and Court of Appeals, as well as the winner-take-all system for allocating Electoral College votes. I have also worked as an expert on redistricting and voting rights cases at the state and local level in Michigan, Washington, Louisiana, New Mexico, Mississippi, Wisconsin, Florida, Georgia, and Alabama. The details of my academic background and my work as an expert are included in my curriculum vitae, which is attached to this declaration as Exhibit C. My curriculum vitae lists all of my publications from the last ten years, along with a list of all of the cases in which I have testified by deposition or at trial in the last four years.

Data and Sources

In preparing my report, I reviewed the reports and the underlying data provided by plaintiffs' experts, Dr. Steven P. Cole, Dr. Loren Collingwood, and Dr. Mathew Barreto. I relied on precinct level data, including publicly available election results and demographic data, CVAP estimates produced by Dr. William Cooper (plaintiffs' expert demographer), and Catalist estimates of voter racial and ethnic characteristics provided by Drs. Collingwood and Barreto.

***Gingles* Prongs Two and Three**

In the paragraphs below, I describe the evolution of Ecological Inference (EI) as commonly used in Voting Rights Act lawsuits to assess voter cohesion and polarization. Both my analysis, and the analysis provided by Dr. Collingwood and Dr. Barreto rely on some form of Ecological Inference estimates.

Gary King's Ecological Inference (EI) procedure was developed as an advance on the existing approach of Ecological Regression that was in common use at that time. King recognized that at least some of the statistical assumptions underlying regression analysis do not hold when one has aggregate data rather than individual data (as we do here). Specifically, the assumptions underlying the regression technique do not recognize that the data are bounded—that is, no more than 100% and no less than 0% of a given racial group can vote for a given candidate. Regression can sometimes lead to unsatisfying conclusions, e.g., a model that predicts that -10% of Black voters supported a candidate, or relatedly that 130% of Black voters supported another candidate. Both results are obviously impossible in the real world. More importantly, the regression technique does not utilize the information that is inherent in these bounds. For example, if we know that a precinct has 100 voters, that 98 of those voters are black, and that 99 people voted for a particular candidate, then we know with complete certainty

that at least 97 of the Black voters voted for that candidate, and that at most 98 did. Ecological Regression fails to utilize this deterministic information and so, in some circumstances, does not use the available data optimally. In contrast, Ecological Inference methods incorporate this information about the bounds for each precinct into the statistical analysis.

Traditional Ecological Regression assumed a linear relationship between the racial composition of precincts and the precinct vote returns. Ecological Inference, in contrast, allows the relationship between the size of the demographic group and support for a candidate to be non-linear. The other major difference between Ecological Regression and Ecological Inference is in the mechanism that is used to estimate the parameters of the model. Ecological Regression uses a mathematical formula that produces a single specific estimated equation given a set of election data. Ecological Inference, on the other hand, estimates the model parameters by an iterative procedure that, over a large number of repeated trials, yields an estimated model that may vary to some degree in repeated estimations, even given the exact same input data. While the details of the estimation procedure are mathematically complex, the key point is that Ecological Inference techniques use the available data in a potentially more efficient and less biased way than previous methods.

In practice, the mathematical techniques for estimating EI have evolved over time with their use. In 1997, Dr. Gary King introduced the technique of Ecological Inference and supplied publicly available software to perform his analysis. The technique was initially described in a book titled "A Solution to the Ecological Inference Problem: Reconstructing Individual Behavior from Aggregate Data."[2] I refer to this technique as "King's EI," or "first-generation

[2] Gary King, A Solution to the Ecological Inference Problem at xv (1997).

EI." Since its introduction, Ecological Inference has been considered by a number of district courts in litigation under Section 2 of the Voting Rights Act[3] and has become the most widely relied on technique for estimating racial voting patterns in Voting Rights Act litigation.

In the years since its introduction, there have been three main advancements associated with King's EI. The first advancement took place in the late 1990s when King initially introduced EI. In the years that followed, the political science and statistics communities identified a problem with King's method. At that time, EI could only be used to estimate voter support where there were two racial groups of interest (e.g., White and Black) and two competing candidates. If there were more than two racial groups or candidates, then one would have to run an independent EI analysis for each race of interest and for each candidate of interest.[4] King referred to this as an "iterative" approach to "row by column" (referred to as "RxC") estimation. Statisticians and social scientists (including King) quickly realized that the iterative approach to RxC estimation was flawed and could not be relied upon to generate reliable estimates for elections with more than two races of interest or more than two candidates.[5]

[3] *See, e.g.*, *Rodriguez v. Harris Cnty., Tex.*, 964 F. Supp. 2d 686, 759, 767 (S.D. Tex. 2013) (Dr. Alford and Dr. Barreto accepted as experts); *Fabela v. City of Farmers Branch, Tex*., 2012 WL 3135545 at * 9 & n.22. (N. D. Tex. Aug. 2, 2012) (Dr. Alford accepted as expert); *Cisneros v. Pasadena Indep. Sch. Dist*., 2014 WL 1668500, at *10 (S.D. Tex. 2014) (Dr. Alford and Dr. Barreto accepted as experts); *Lopez v. Abbott*, 2018 WL 4346891, at *10 (S.D. Tex. 2018) (Dr. Alford accepted as expert).

[4] In practice, this involves simulating a two-race analysis by comparing the racial group of interest against a "dummy" group comprising the combination of all the other races. So instead of comparing the Black population against the White population (as one would do if there were *actually* only two races of interest), one would compare the Black population against the *combination* of the White and Latino populations. Then, one would repeat this process for each other race and candidate of interest. So in an election with three candidates and three races of interest, one would have to run the first-generation method 9 times (i.e. once for each race-candidate pair).

[5] *See* Karen Ferree, *Iterative Approaches to R × C Ecological Inference Problems: Where They Can Go Wrong and One Quick Fix*, 12 Political Analysis 143 (2004).

The second advancement associated with King's EI method took place in 2001. After acknowledging the shortcomings of the iterative RxC approach, King published a more advanced theoretical approach to RxC estimation. At the time, the theoretical approach was viewed as computationally impractical—it could take more than a week to run a single model on the computers available at that time. Because of these computational difficulties, King included an alternate method that could approximate the results of the theoretical approach in a timely fashion.[6] Because the alternate method could accommodate elections with several races and/or candidates, it became the standard approach utilized by experts in voting rights cases.

The third advancement to EI came in 2007, when social scientists Olivia Lau, Ryan T. Moore, and Michael Kellerman introduced a software module called "eiPack." EiPack took advantage of advancements in computing technology and allowed political scientists to apply King's advanced technique for a Bayesian estimation of RxC EI models, without having to rely on King's previous frequentist approximation.[7] I refer to this as the "third-generation" of EI, or the truly Bayesian method. The computational routine for this approach to estimating EI is called "ei.MD.bayes" in eiPack, and this is the routine used for my analysis here. This is also the same routine relied on in the package ei.Compare that was used by Dr. Collingwood and Dr. Barreto for the EI analysis that they performed in this case.

Whichever version of EI is used, in order to generate estimates of voter support for candidates by racial group, a researcher must input two types of data into the EI procedure. First

[6] *See* Ori Rosen, Wenxin Jiang, Gary King, & Martin A. Tanner, *Bayesian and Frequentist Inference for Ecological Inference: The R x C Case*, 55 Statistica Neerlandica 134 (2001) (Exhibit 3).

[7] *See* Olivia Lau, Ryan T. Moore, and Michael Kellermann, *eiPack: Ecological Inference and Higher-Dimension Data Management*, 7 R News 43 (2007).

is the official election data from the jurisdiction showing how many votes were cast for each of the candidates in each precinct. This data generally comes directly from the relevant jurisdiction and is rarely, if ever, disputed.

Second, the researcher must provide demographic information about the relevant racial and/or ethnic characteristics of each precinct in the jurisdiction. The demographic information consists of a precinct-level summary of the racial breakdown of the eligible voter population. In most cases, the standard input of demographic information is inferred from the "voting age population" or "VAP" or, more recently, from the "citizen voting age population" or "CVAP" data provided by the United States census at the Census block or block group level.

By way of example, the precinct-level summary of CVAP data for East Ramapo, as estimated by Plaintiffs' demography expert, Dr. Cooper, is as follows:

Table 1

East Ramapo School District Census Estimates*

	Poll	Poll Location	Total CVAP	Latino CVAP%	NH Black CVAP%	NH White CVAP%
1	E01	Lime Kiln	4066.49	5.77%	1.35%	90.22%
2	E02	Summit Park	5661.93	12.49%	16.26%	59.15%
3	E03	Kakiat	6175.87	1.19%	5.62%	92.72%
4	E04	Ramapo HS	5405.08	1.95%	0.40%	96.74%
5	E05	Hillcrest	6999.50	7.23%	31.53%	55.17%
6	E06	Kurtz Center	8966.21	16.20%	51.25%	23.19%
7	E07	Spring Valley	10096.54	9.72%	27.08%	60.51%
8	E08	Margetts	2929.00	12.88%	13.03%	71.64%
9	E09	Chestnut Ridge	3889.35	10.90%	19.29%	61.62%
10	E10	Hempstead	6132.52	13.08%	41.58%	31.86%
Total Sum			60322.49			

*ACS 2011-2015

In states like Georgia that include questions regarding race and ethnicity on their voter registration forms, the resulting self-classification of voters can be used as an alternative to CVAP data. Where the focus is on Hispanic voters, a Spanish surname list produced by the Census Bureau can be used to code registered voters as Hispanic or non-Hispanic, particularly in Texas and California.

Even though third generation EI presently is the best available method of statistical analysis to use in Voting Rights litigation, EI is not a panacea. In general, as is the case for any statistical estimation, the reliability and usefulness of EI is constrained by the quantity and quality of the data to be analyzed. The accuracy of EI estimates will vary depending on the concentration across precincts.

A measure of the quality of the input data, including the number of polling locations and/or the degree of variation in the distribution of racial/ethnic reliability of EI estimates can be computed by the EI software. The standard practice among social scientists is to report "confidence intervals" (or the functionally equivalent "level of statistical significance") for any point estimate that is reported.[8] These confidence intervals can then be used in conjunction with the point estimates to assess whether the EI estimates provide a sufficiently reliable demonstration of a voting pattern, such as minority cohesion.

For example, if an EI analysis estimates that candidate 'A' received 55% of the Black vote, with a 95% confidence interval between 53% and 57%, one could conclude, with a 95% level of confidence, that the candidate received a majority of the Black vote, since 50%, and the values below 50%, fall outside of the entire 95% confidence interval. Expressed in terms of

[8] In the case of the Bayesian RxC method, the confidence interval is technically referred to as a "credible interval," but the use and interpretation of the interval remains as discussed here.

statistical significance, we would say that a 55% point estimate is a statistically significant indication of majority Black support for candidate 'A', at the two-tailed .05 level. However, if the confidence interval for the same 55% point estimate ranged between 25% and 85%, then one would not be able to conclude at the standard political science level of 95% confidence that candidate 'A' received a majority of the Black vote, since multiple possible values at or below 50% lie within the 95% confidence interval.[9]

Election Analysis – *Gingles* 2 – Minority Cohesion

If multiple racial or ethnic groups are combined for the purpose of satisfying the three *Gingles* preconditions, as Plaintiffs here are attempting to do with Blacks and Hispanics in the District, then the inquiry into minority voter cohesion must begin by establishing that the distinct groups are indeed politically cohesive, and that they are politically cohesive in the support of the same candidates, such that they can be treated as a single cohesive minority.[10] One cannot simply assume, without evidence, that Black voters and Hispanic voters vote

[9] At his deposition, Dr. Collingwood agreed with this understanding and interpretation of confidence intervals. Collingwood Deposition Rough Transcript ("Collingwood Tr.") at 50 ("Q: Does a 95 percent confidence interval allow you to say with 95 percent confidence that the true value is within that interval? A: That would be correct, yes."); Collingwood Deposition Afternoon Rough Transcript ("Collingwood Afternoon Tr.") at 42 ("Q: Can you say with 95 percent confidence that Dos Reis was the minority preferred candidate in this election? A: Not with 95 percent confidence from a statistical standpoint. One wouldn't necessarily say that. Q: All right. And that's because there are values in the 95 percent confidence interval that are below 50 percent and above 50 percent, right? A: In this case we're looking at [racially polarized voting] in a two candidate election, .5 or 50 percent, you see the number—the confidence bands cover that. That would be why you would say that.")

[10] In fact, the federal circuit courts of appeal are split as to whether different minority groups may ever be aggregated to establish a Section 2 claim. *Compare Nixon v. Kent Cnty*., 76 F.3d 1381, 1393 (6th Cir. 1996) (en banc) (holding such "coalition suits" impermissible), with *Concerned Citizens of Hardee Cnty. v. Hardee Cnty. Bd. of Comm'rs*, 906 F.2d 524, 526 (11th Cir.1990) (approving aggregate Section 2 claims) *with Campos v. City of Baytown*, 840 F.2d 1240, 1244 (5th Cir.1988) (same). The Supreme Court has expressly reserved decision on the issue, while at the same time indicating that a plaintiff relying on an aggregated minority group would have to demonstrate that its members are politically cohesive. *See Growe v. Emison*, 507 U.S. 25, 41 (1993).

cohesively, favor the same candidates, or hold the same general political preferences simply because both are minority groups.

The analysis provided by Dr. Collingwood and Dr. Barreto begins by presenting EI estimates of voter support broken down by categories of "White" and "non-White" or "White" and "Minority,"[11] and therefore treats Blacks and Hispanics, and indeed all non-white voters, as a single minority, but without first providing any empirical evidence that combining these disparate groups is justified. As a result, their estimates of voter support divided by "White" and "non-White" groups and "White" and "Minority" groups shouldn't be considered.

The proper method of analysis here is to try to estimate voter support by each of the racial categories of interest: White, Black, and Hispanic. The five tables below provide in a single place my Bayesian RxC EI election analysis for whites, Blacks, and Hispanics, as well as all of the Bayesian RxC EI election analysis for whites, Blacks, and Hispanics provided by Dr. Collingwood and Dr. Barreto in their reports.[12]

There are no CVAP results from Dr. Collingwood and Dr. Barreto in any of these tables because while they produced Bayesian RxC EI results using CVAP for white versus non-white

[11] Barreto & Collingwood Preliminary Report ("B&C I") at 10-11.

[12] I did not attempt to replicate any of the analysis provided by Dr. Collingwood and Dr. Barreto that relies on the older problematic iterative version of EI. Nor do I rely on those estimates for any of my conclusions in this report. As discussed above in the methodology section, Bayesian RxC EI was developed to deal with the flaws in the iterative approach, not to be used as an equally valid companion approach. In their report, Dr. Collingwood and Dr. Barreto suggest that in their experience, the two techniques typically produce very consistent results, but in fact in this case they do not produce consistent results, as a look at any of the estimates for Hispanic voting cohesion across the two techniques makes clear. Moreover, the publication they cite as evidence for the similarity of the results from these two techniques relied on an earlier version of eiCompare that appears to mistakenly utilize Bayesian regression, rather that Bayesian RxC EI, to produce what it reports as the Bayesian RxC EI estimates. *See* Collingwood et al., *eiCompare*, 8 The R Journal 92 (2016).

in their preliminary report,[13] as well as Bayesian RxC EI results for whites, Blacks, and Hispanics in the 2012 U.S. Presidential contest,[14] they did not report any Bayesian RxC EI results for whites, Blacks, and Hispanics for any school board election in either report. This is surprising given that relying on Census Bureau CVAP or VAP data has long been the standard in assessing voter cohesion for *Gingles* 2 and 3. Moreover, both Dr. Barreto and Dr. Collingwood clearly appreciate the utility of employing CVAP data to assess Black and Hispanic cohesion, as Dr. Barreto has done so repeatedly in his previous work on racial polarization in other cases, and to my knowledge has never relied before on either BISG or Catalist data.

The CVAP data was certainly available for this purpose. As noted above, precinct level CVAP data was collected for the purpose of EI analysis by Plaintiffs' demography expert, Dr. Cooper, and relied on by Dr. Cole for all of his EI analysis in this case,[15] by myself for all of the EI analysis in my earlier report and affidavit in this case,[16] and by Dr. Collingwood and Dr. Barreto themselves for selected parts of their analysis—specifically where they combine non-white voters.[17] Dr. Collingwood and Dr. Barreto do not offer any explanation for why they did not use the CVAP data to generate estimates of white, Black, and Latino voting patterns.

This pattern of selective use of different combinations of varying techniques and data sources appears throughout the Barreto and Collingwood reports. Given the resulting complexity, I have included Table 2 below that compiles and displays their various forms of

[13] Barreto & Collingwood Preliminary Report Appendix ("B&C I App.") at 2-7.

[14] *Id.* at 8.

[15] *See Cole Preliminary Report* at 7.

[16] *See Ex. A* at 10.

[17] *See* B&C I App. at 2-7.

analysis and shows where they were selectively employed in their election analysis of voter cohesion and polarization.[18] As the large number of red gaps in the table suggests, this use of varied methods and data sources is more of a patchwork, with substantial omissions, than it is a traditional deployment of overlapping methods to increase our confidence in the results.

Table 2: Barreto and Collingwood Election Analysis Methodologies

	2x2 CVAP		2x2 BISG		2x2 Catalist		RxC CVAP		RxC BISG		RxC Catalist	
	W/NW	W/B/L	W/NW	W/B/L	W/NW	W/B/L	W/NW	W/B/L	W/NW	W/B/L	W/NW	W/B/L
2013	*		*	*			*		*	*		
2015	*						*					
2016	*		*	*			*		*	*		
2017	*			*	*	*	*			*	*	*
2018			*	*					*	*		

In contrast to VAP and CVAP, BISG is a fairly new technique that to my knowledge has not been relied on by any court in any voting rights case. In fact, I have only seen BISG used in an expert report once before, in a Voting Rights Act case involving a challenge to the at-large election system in the city of Eastpointe, Michigan. In that case, the expert, Dr. Lisa Handley, produced a comparable CVAP analysis for every election contest that she analyzed using BISG data, along with an explicit comparison of the precinct level BISG estimates of turnout to the precinct level CVAP estimates.[19] As discussed below, Collingwood and Barreto did not provide any of this in their reports in this case. The Eastpointe case has not gone to trial yet, and there is currently a motion pending to exclude the BISG evidence as unreliable. *See United States v. City of Eastpointe*, 4:17-cv-10079, Docket No. 42 (E.D. Mich.). Similarly, I am not aware of

[18] Red cells in the table indicate where Barreto and Collingwood have not performed analysis using the methodology listed at the top of the column. Green cells indicate where they have performed the analysis listed at the top of the column. Not one column is either entirely green or red, showing the inconsistency of their patchwork approach.

[19] *See* Handley Eastpointe Expert Report at 11 (table comparing BISG precinct level estimates with CVAP precinct level estimates), 22-37 (tables comparing BISG EI results with CVAP EI Results).

any Voting Rights Act case in which Catalist data has been used in an analysis of racially polarized voting.[20]

Given the novelty of this data source, it is surprising that Collingwood and Barreto offer no formal evaluation of the precinct level BISG turnout estimates anywhere in their report. They do not compare them, for example, to the precinct level CVAP estimates that were compiled by William Cooper. Nor do they compare them to the CVAP based precinct level EI turnout estimates that they produced and relied on to perform what they call their 'algebra' analysis. Nor do they utilize them to provide an 'algebra' analysis based on the BISG turnout estimates. In fact, Dr. Collingwood claims that he never even saved any of the BISG or Catalist precinct level estimates of racial turnout that he relied on to perform all of the BISG and Catalist EI analyses included in the report.[21]

As mentioned above, in addition to the novel use of BISG data, Collingwood and Barreto use another novel approach that I term their "Election Algebra" analysis.[22] After generating EI estimates for White voters, Collingwood and Barreto use what they refer to as "some basic algebra" to estimate non-White voting patterns.[23] Their method takes as inputs their EI estimates of White voter support for a candidate, their EI estimates for White voter turnout, their EI

[20] The exact nature of the Catalist voter data used by Barreto and Collingwood is somewhat unclear and has not been disclosed. Catalist maintains a proprietary system of voter coding that can include a variety of material from other sources and uses surnames and other name elements in a variety of ways to arrive at race/ethnicity codes for individual voters.

[21] Collingwood Afternoon Tr. at 106.

[22] Barreto and Collingwood at 15.

[23] B&C I at 12.

estimates for non-White voter turnout, and the CVAP estimates of the White and non-White voter population.[24] They combine this information according to the following formulas:

> (1): (estimated number of non-White votes for a candidate) = (total votes for that candidate) – (estimated number of White votes for that candidate)
>
> (2): (estimated number of White votes for a candidate) = (CVAP estimate of number of White voters) * (EI estimate of White voter turnout) * (EI estimate of White voter support for that candidate)
>
> (3): (estimated proportion of non-White voters who supported a candidate) = (estimated number of non-White votes the candidate received) / (estimated number of non-White votes cast in the election)
>
> and (4): (estimated number of non-White votes cast in the election) = ((CVAP estimate of number of non-White voters) * (EI estimate of non-White voter turnout))

After combining the above equations, Collingwood and Barreto end up with the following "master" equation:

> (estimated proportion of non-White voters who supported a candidate) = ((total votes for that candidate) – ((CVAP estimate of number of White voters) * (EI estimate of White voter turnout) * (EI estimate of White voter support for that candidate))) / (((CVAP estimate of number of non-White voters) * (EI estimate of non-White voter turnout))).

I have not attempted to replicate this analysis, and I do not find it to be useful in reaching conclusions about minority cohesion in this case for several reasons. Like BISG, this is not a technique that I have seen used in any prior case to assess minority voter cohesion. Nor is it clear what function this technique serves. The EI analysis they used to generate their estimates of White voter support to input into the algebra also produced estimates of non-White voter support, as can be seen by simply looking at the EI results they append to their report.[25] Discarding those estimates for non-white voters and then recalculating them using selective retained estimates

[24] *Id.* at 12-13.
[25] B&C I App. at 2-7.

accomplishes little beyond obscuring the fact that these calculated estimates are no more reliable than the EI estimates that were discarded.

In addition, like the White/non-White EI analysis that Barreto and Collingwood produce, this technique assumes that Black, Hispanic, and other non-White voters are cohesive and can be combined, rather than properly assessing whether they *are* cohesive, and *therefore* can be combined. This failure to treat Blacks and Hispanics separately is not in any way inherent in the 'Election Algebra' approach, any more than it is inherent in an EI analysis. Despite having everything they need to apply their "Election Algebra" to Whites, Blacks, Hispanics, and others, Barreto and Collingwood only apply it to Whites and all non-Whites. Further, as noted above, Barreto and Collingwood do not carry this technique forward into their second report by utilizing either the precinct turnout estimates that their BISG procedure generated, or the estimates of White voter cohesion that the BISG based EI analysis produced. Given that their "Election Algebra" approach depends on accurate turnout estimates, and is subject to the inherent uncertainty in their CVAP based EI turnout estimates, it is surprising that they would not want update it or take any steps to try to verify it.

Table 3 provides the results of all of my Bayesian RxC EI estimates, based on Plaintiffs' precinct-level CVAP estimates, for Whites, Blacks, and Hispanics in a single table. It includes the contests from 2017, 2016, 2015, and 2013. It also includes confidence intervals, as well as information on the race/ethnicity of each the candidates in each election.

Table 4 provides results for the three contests in 2017, and includes for each candidate in each contest my Bayesian RxC EI using precinct CVAP, my Bayesian RxC EI analysis using

precinct level Catalist data on voters,[26] Dr. Barreto and Dr. Collingwood's Bayesian RxC EI using Catalist, and Dr. Barreto and Dr. Collingwood's Bayesian RxC EI using BISG voter data.

Table 5 provides results for the three contests in 2016, and includes for each candidate in each contest my Bayesian RxC EI analysis using precinct CVAP, and Dr. Barreto and Dr. Collingwood's Bayesian RxC EI using BISG voter data. There was no Catalist data for any year except 2017.

Table 6 provides results for the three contests in 2015, and includes for each candidate in each contest my Bayesian RxC EI analysis using precinct CVAP. Dr. Barreto and Dr. Collingwood have not yet produced any comparable Bayesian RxC EI.

Table 7 provides results for the three contests in 2013, and includes for each candidate in each contest my Bayesian RxC EI analysis using precinct CVAP, and Dr. Barreto and Dr. Collingwood's Bayesian RxC EI using BISG voter data.[27]

As explained above, an estimate is regarded as statistically significant where the 95% confidence or credible interval does not cross 50%. In the tables below, estimates that are not statistically significant because the 95% confidence or credible interval crosses 50% are indicated by red cells.

[26] The 2017 Catalist data was provided by the plaintiffs at the individual voter level and was summed to the precinct level for the EI analysis.

[27] I did not attempt to replicate Collingwood's and Barreto's one exogenous election analysis of the 2012 presidential election. While exogenous elections can sometimes provide useful information about voting patterns, there are significant differences between the presidential election and the schoolboard elections at issue in this case. The 2012 election involved a larger, more engaged electorate, a completely different set of issues, partisan politics, and a different voting structure. Additionally, the 2012 election was a very high profile election, held on-cycle in November, had national significance, and was the subject of several fierce, months-long campaigns. However, I note that in the 2012 election analyzed by Collingwood and Barreto, the minority-preferred candidate—President Obama—won.

Table 3: 2017, 2016, 2015, 2013 ERCSD Elections – Bayesian RxC using CVAP

		Candidate	Election Date	Race	White Vote %	Black Vote %	Latino Vote %
2017	Seat 1	Mark Berkowitz*	5/16/17	W	86% (75, 95)	**54%** (12, 90)	**73%** (40, 95)
		Alexandra K. Manigo	5/16/17	W	14% (5, 25)	**46%** (10, 88)	**27%** (5, 60)
	Seat 2	Harry Grossman*	5/16/17	W	86% (75, 96)	**53%** (10, 89)	**26%** (5, 60)
		Eric Goodwin	5/16/17	B	14% (4, 25)	**47%** (11, 90)	**74%** (40, 95)
	Seat 3	Joel Freilich*	5/16/17	W	87% (77, 96)	**59%** (14, 92)	**31%** (7, 65)
		Chevon Dos Reis	5/16/17	L	13% (4, 23)	**41%** (8, 86)	**69%** (35, 93)
2016	Seat 1	Bernard L. Charles, Jr.*	5/17/16	B	85% (74, 95)	**59%** (13, 91)	**34%** (7, 69)
		Kim A. Foskew	5/17/16	W	15% (5, 26)	**41%** (9, 87)	**66%** (31, 93)
	Seat 2	Pierre Germain*	5/17/16	B	85% (74, 94)	**58%** (14, 92)	**32%** (6, 66)
		Jean E. Fields	5/17/16	B	15% (6, 26)	**42%** (8, 86)	**68%** (34, 94)
	Seat 3	Yehuda Weissmandl*	5/17/16	W	84% (73, 94)	**56%** (11, 92)	**27%** (5, 60)
		Natashia E. Morales	5/17/16	L	16% (6, 27)	**44%** (8, 89)	**73%** (40, 95)
2015	Seat 1	Jacob L. Lefkowitz*	5/19/15	W	82% (70, 93)	**42%** (6, 81)	**17%** (3, 43)
		Sabrina Charles-Pierre	5/19/15	B	16% (6, 29)	**53%** (15, 89)	**75%** (45, 92)
		Alan Keith Jones	5/19/15	B	1% (0, 3)	5% (1, 16)	**8%** (2, 20)
	Seat 2	Yonah Rothman*	5/19/15	W	82% (69, 94)	**48%** (8, 86)	**20%** (3, 52)
		Natasha Morales	5/19/15	L	18% (6, 31)	**52%** (14, 92)	**80%** (48, 97)
	Seat 3	Juan Pablo Ramirez*	5/19/15	L	78% (65, 89)	**47%** (8, 84)	**21%** (4, 50)
		Steve D. White	5/19/15	W	17% (6, 30)	**49%** (12, 87)	**74%** (43, 93)
		Yisroel Eisenbach	5/19/15	W	6% (3, 8)	5% (0, 15)	**5%** (1, 14)
2013	Seat 1	MaraLuz Corado*	5/21/13	L	84% (67, 96)	**50%** (10, 87)	**23%** (4, 54)
		Margaret Tuck	5/21/13	B	17% (4, 33)	**50%** (13, 90)	**77%** (46, 96)
	Seat 2	Pierre Germain*	5/21/13	B	80% (67, 92)	**52%** (11, 88)	**26%** (5, 59)
		Eustache Clerveaux	5/21/13	B	20% (8, 33)	**48%** (12, 89)	**74%** (41, 95)
	Seat 3	Bernard L. Charles, Jr.*	5/21/13	B	80% (66, 92)	**52%** (11, 89)	**25%** (5, 57)
		Robert Forest	5/21/13	B	20% (8, 34)	**48%** (11, 89)	**75%** (43, 95)

Table 4: 2017 ERCSD Elections – Bayesian RxC with eiCompare Parameters[28]

Candidate	Race	Data	White	low CI	high CI	Black	low CI	high CI	Hispanic	low CI	high CI
Seat 1											
Manigo	W	Alford CVAP	14%	5%	25%	**46%**	10%	88%	**73%**	40%	95%
		Alford Catalist	30%	26%	34%	**59%**	35%	83%	**55%**	21%	86%
		Pltf. Catalist	25%	22%	28%	83%	62%	97%	**63%**	26%	91%
		Pltf. BISG	27%	22%	31%	77%	53%	96%	**64%**	30%	91%
Berkowitz	W	Alford CVAP	86%	75%	95%	**54%**	12%	90%	**27%**	5%	60%
		Alford Catalist	70%	66%	74%	**41%**	17%	65%	**45%**	14%	79%
		Pltf. Catalist	75%	72%	78%	17%	3%	38%	**37%**	9%	74%
		Pltf. BISG	73%	69%	78%	23%	4%	47%	**36%**	9%	70%
Seat 2											
Goodwin	B	Alford CVAP	14%	4%	25%	**47%**	11%	90%	**74%**	40%	95%
		Alford Catalist	29%	25%	34%	**60%**	35%	83%	**56%**	21%	87%
		Pltf. Catalist	25%	22%	29%	80%	58%	96%	**65%**	30%	91%
		Pltf. BISG	26%	22%	31%	77%	52%	95%	**64%**	29%	91%
Grossman	W	Alford CVAP	86%	75%	96%	**53%**	10%	89%	**26%**	5%	60%
		Alford Catalist	71%	66%	75%	**40%**	17%	65%	**44%**	13%	79%
		Pltf. Catalist	75%	71%	78%	20%	4%	42%	**35%**	9%	70%
		Pltf. BISG	74%	69%	78%	23%	5%	48%	**36%**	9%	71%
Seat 3											
Dos Reis	L	Alford CVAP	13%	4%	23%	**41%**	8%	86%	**69%**	35%	93%
		Alford Catalist	27%	22%	31%	**54%**	28%	80%	**53%**	19%	86%
		Pltf. Catalist	22%	19%	27%	78%	53%	96%	**64%**	30%	91%
		Pltf. BISG	24%	18%	29%	**73%**	45%	94%	**60%**	24%	90%
Frielich	W	Alford CVAP	87%	77%	96%	**59%**	14%	92%	**31%**	7%	65%
		Alford Catalist	73%	69%	78%	**46%**	20%	72%	**47%**	14%	81%
		Pltf. Catalist	78%	73%	81%	22%	4%	47%	**36%**	9%	70%
		Pltf. BISG	77%	71%	82%	**27%**	6%	55%	**40%**	10%	76%

[28] "Alford CVAP" refers to my EI estimates generated using CVAP data inputs in RXC analysis. "Alford Catalist" refers to estimates generated by failed attempt to replicate Barreto's and Collingwood's EI estimates using Catalist data as an input for the 2017 election analysis. "Pltf. Catalist" refers to Barreto's and Collingwood's EI estimates using Catalist data as an input for the 2017 election analysis. "Pltf. BISG" refers to Barreto's and Collingwood's EI estimates using BISG data as an input.

Table 5: 2016 ERCSD Elections – Bayesian RxC with eiCompare Parameters

	Candidate	Race	Data	White	low CI	high CI	Black	low CI	high CI	Hispanic	low CI	high CI
Seat 1	Charles	B	Alford CVAP	85%	74%	95%	**59%**	13%	91%	**34%**	7%	69%
			Pltf. BISG	75%	71%	79%	**25%**	5%	51%	**41%**	11%	76%
	Foskew	W	Alford CVAP	15%	5%	26%	**41%**	9%	87%	**66%**	31%	93%
			Pltf. BISG	25%	21%	29%	**75%**	49%	95%	**59%**	24%	89%
Seat 2	Germain	B	Alford CVAP	85%	74%	94%	**58%**	14%	92%	**32%**	6%	66%
			Pltf. BISG	74%	70%	77%	24%	5%	48%	**41%**	10%	77%
	Fields	B	Alford CVAP	15%	6%	26%	**42%**	8%	86%	**68%**	34%	94%
			Pltf. BISG	26%	23%	30%	76%	52%	95%	**59%**	23%	90%
Seat 3	Weissmandl	W	Alford CVAP	84%	73%	94%	**56%**	11%	92%	**27%**	5%	60%
			Pltf. BISG	72%	69%	75%	19%	4%	39%	**37%**	9%	72%
	Morales	L	Alford CVAP	16%	6%	27%	**44%**	8%	89%	**73%**	40%	95%
			Pltf. BISG	28%	25%	31%	81%	61%	96%	**63%**	28%	91%

Table 6: 2015 ERCSD Elections – Bayesian RxC with eiCompare Parameters

	Candidate	Race	Data	White	low CI	high CI	Black	low CI	high CI	Hispanic	low CI	high CI
Seat 1	Charles- Pierre	B	Alford CVAP	16%	6%	29%	**53%**	15%	89%	**75%**	45%	92%
	Lefkowitz	W	Alford CVAP	82%	70%	93%	**42%**	6%	81%	**17%**	3%	43%
	Jones	B	Alford CVAP	1%	0%	3%	5%	1%	16%	**8%**	2%	20%
Seat 2	Rothman	W	Alford CVAP	82%	69%	94%	**48%**	8%	86%	**20%**	3%	52%
	Morales	L	Alford CVAP	18%	6%	31%	**52%**	14%	92%	**80%**	48%	97%
Seat 3	White	W	Alford CVAP	17%	6%	30%	**49%**	12%	87%	**74%**	43%	93%
	Ramirez	L	Alford CVAP	78%	65%	89%	**47%**	8%	84%	**21%**	4%	50%
	Eisenbach	W	Alford CVAP	6%	3%	8%	5%	0%	15%	**5%**	1%	14%

Table 7: 2013 ERCSD Elections – Bayesian RxC with eiCompare Parameters

	Candidate	Race	Data	White	low CI	high CI	Black	low CI	high CI	Hispanic	low CI	high CI
Seat 1	Tuck	B	Alford CVAP	17%	4%	33%	**50%**	13%	90%	**77%**	46%	96%
			Pltf. BISG	32%	27%	37%	85%	66%	98%	**66%**	37%	89%
	Corado	L	Alford CVAP	83%	67%	96%	**50%**	10%	87%	**23%**	4%	54%
			Pltf. BISG	68%	63%	73%	15%	2%	34%	**34%**	11%	63%
Seat 2	Clerveaux	B	Alford CVAP	20%	8%	33%	**48%**	12%	89%	**74%**	41%	95%
			Pltf. BISG	33%	28%	38%	74%	53%	93%	**61%**	26%	90%
	Germain	B	Alford CVAP	80%	67%	92%	**52%**	11%	88%	**26%**	5%	59%
			Pltf. BISG	67%	62%	72%	26%	7%	47%	**39%**	10%	74%
Seat 3	Forrest	B	Alford CVAP	20%	8%	34%	**48%**	11%	89%	**75%**	43%	95%
			Pltf. BISG	34%	29%	38%	78%	59%	93%	**56%**	23%	87%
	Charles	B	Alford CVAP	80%	66%	92%	**52%**	11%	89%	**25%**	5%	57%
			Pltf. BISG	66%	62%	71%	22%	7%	41%	**44%**	13%	77%

Looking first at the estimates for Black voters across these tables, we can see that the CVAP analysis does not support a conclusion that Black voters are voting cohesively. The Black vote splits fairly evenly in every election, with the favored candidate getting something in the 50% to 60% range. With a 50-50 split defining zero cohesion in a two-person contest, this is simply not anything even approaching cohesive voting. In addition, the very wide confidence intervals all cross 50%, which means that we cannot be confident at the 95% level that even these very modest levels of support are reliable. My estimates for the 2017 election using the Catalist data do not differ materially from the traditional CVAP estimates. Black voter cohesion is at 60% or below, and all of the confidence intervals are wide.

In contrast, the estimates based on the Catalist data and the BISG data produced in the Collingwood and Barreto report provide a different picture, with moderate levels of Black cohesion in each of the 2017 election contests. Additionally, almost all of the confidence or credible intervals associated with those estimates do not include 50%. Since my Catalist estimates and the Catalist estimates produced by Collingwood and Barreto rely on the same

Catalist voter file provided by the plaintiffs, and the same Bayesian RxC EI estimation with the same input parameters,[29] used in the most recent version of eiCompare (available publicly on GitHub), it is not clear why they would differ at all, much less so dramatically.[30] The fact that my estimates, which were generated using Collingwood and Barreto's software, script, and data, are different from the estimates included in their report, cause me to doubt the reliability of their estimates.

Looking at the Hispanic voter estimates provides a more uniform picture. All of the estimates are low, typically varying around 55 to 70 percent, and the confidence or credible interval for each estimate in each of the years considered, and for each data source considered, crosses 50%. This indicates that at the 95% confidence level used in social science research, we cannot be confident about which candidate, if any, received the most Hispanic votes, in any election analyzed.

Based on the traditionally accepted CVAP analysis, there is not sufficient evidence of voter cohesion to conclude that either Black or Hispanic voters are cohesive, much less that they form a single politically cohesive group. My analysis using Barreto and Collingwood's novel

[29] I have examined the script provided by Dr. Collingwood for his Bayesian RxC EI analysis and it calls a routine md_bayes_draw in eiCompare with default parameters that, according to Collingwood's documentation for eiCompare, exactly matches the underlying estimation routine (ei.MD.bayes) and all of the associated options in my analysis provided here.

[30] I also attempted to replicate Collingwood and Barreto's precinct level BISG data and accompanying EI analysis. The attempted replication of the BISG analysis could not be completed in time for this report because it was not clear until Collingwood's recent deposition that the precinct level BISG data needed to replicate the EI analysis had not been retained or disclosed by Collingwood and thus were not available. Collingwood Afternoon Tr. at 106. In addition, portions of the R code that Collingwood provided for the WRU processing of the raw voter files need to recreate the precinct level BISG files for each election were not actual executable code, but were instead simply comment lines that provided a synopsis of the process. The attempt to replicate the 2018 election analysis is also awaiting and cannot be performed at this time, as no CVAP files we provided for that election and the precinct level BISG data for that election was not retained or disclosed by Barreto and Collingwood.

Catalist data for the three 2017 contests provides the same conclusion. Even if we rely on the analysis of novel Catalist and BISG data provided by Collingwood and Barreto, we cannot conclude that Hispanics are voting cohesively given the extremely wide confidence or credible intervals for all of their estimates of Hispanic voter support for candidates.

Election Analysis – *Gingles* 3 – Majority Cohesion

The estimates for white voter cohesion across all the tables here, and in the reports produced by Collingwood and Barreto, stand in very clear contrast to the results for minority cohesion. All of the results from all of the data sources and all of the methods show the same stable level of 70-80% white support for one candidate in each contest. Moreover, the credible or confidence intervals for these estimates are all fairly narrow and none reaches low enough to include 50%. While it is clear that whites are voting cohesively, however, it is not clear that this reflects racial polarization.

Typically, plaintiffs' experts in Voting Rights Act cases like this one use elections in which a White candidate is running against a minority candidate to demonstrate that minorities are voting cohesively in support of minority candidates, and in turn that whites are voting cohesively to defeat those minority candidates. This is the reason that such "racially contested" elections are considered to be the most probative elections for assessing voter cohesion for *Gingles* prongs 2 and 3. In their reports, however, Collingwood and Barreto make no attempt to connect the voting cohesion of minorities or of whites to the race or ethnicity of the candidates, despite the fact that there are multiple Black and Hispanic candidates in the elections they analyzed.

This is not the approach that Dr. Barreto has taken in the past. In a recent case in Harris County, Texas, Dr. Barretto only considered elections in which there was a Latino candidate,

and examined Latino and white voting patterns in light of their respective support for the Latino candidate. He summarized as follows:

> In every instance, Latino voters greatly prefer to vote for Latino candidates, and in every instance Latino voters demonstrate a statistically significantly higher vote for a Latino candidate than do Whites by huge margins.[31]

Dr. Barretto used the same approach in a later case involving the Pasadena Independent School District in Texas. Again, he focused only on contests in which there was a Latino candidate running against a candidate of another race and then focused on the degree of cohesion of Latino voters in support of those Latino candidates.[32]

Taking into account the race/ethnicity of the candidates and comparing the voting patterns of whites and minorities across these elections provides clear evidence that in East Ramapo School Board elections, race is not the source of whatever levels of cohesion exist. The Goodwin/Grossman contest in 2017, with a Black candidate, Goodwin, running against a white candidate, Grossman, is an example of the sort of racially contested election that would typically be examined in a Voting Rights Act case. According to my CVAP estimates Goodwin, the Black candidate, received 47% of the Black vote, 74% of the Hispanic vote, and 14% of the white vote. That looks like evidence of some degree of racially motivated voting, but in the same sort of racially contested election in 2016, Foskew, the *White* candidate, received a similar 41% of the Black vote, 66% of the Hispanic vote, and 15% of the White vote.

In a 2017 contest between two white candidates, one of the White candidates, Manigo, received a similar 46% of the Black vote, 73% of the Hispanic vote, and 14% of the White vote.

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[31] Pedraza and Barreto Expert Report in *Rodriquez, et al. v Harris County, Texas*, 4:11-cv-02970 (S.D. Tex.) at 16.

[32] *See generally* Pedraza and Barreto Expert Report in *Cisneros v. Pasadena Indep. Sch. Dist.*, 4:12-cv-02579 (S.D. Tex.).

Similarly, in a 2016 contest between two Black candidates, one of the Black candidates, Fields, received 42% of the Black vote, 68% of the Hispanic vote, and 14% of the White vote.

We can see exactly the same pattern of non-response to race of the candidate among voters even if we accept for hypothetical purposes the BISG estimates favored by Collingwood and Barreto. Again, beginning with the Goodwin/Grossman contest in 2017, with a Black candidate, Goodwin, running against a White candidate, Grossman, but now looking at Collingwood and Barreto's preferred BISG estimates, Goodwin, the Black candidate, received 77% of the Black vote, 64% of the Hispanic vote, and 26% of the White vote. Again, that looks like evidence of some degree of racially polarized voting, but in the same sort of racially contested election in 2016 Foskew, the *White* candidate, received a remarkably similar 75% of the Black vote, 59% of the Hispanic vote, and 25% of the White vote. Her Black opponent, Charles, received 25% of the Black vote, 41% of the Hispanic vote, and 75% of the White vote. In a 2017 contest between two White candidates, one of the White candidates, Manigo, received 77% of the Black vote, 64% of the Hispanic vote, and 27% of the white vote. Similarly, in a 2016 contest between two Black candidates, one of the Black candidates, Fields, received 76% of the Black vote, 59% of the Hispanic vote, and 26% of the White vote.

Going down the whole line of contests from 2017 to 2013 it is clear that there is very little variation in the share of the White vote going to the White preferred candidate, and what modest variation there is does not appear to follow any pattern that is related to the race of any of the candidates. Looking down the list of CVAP white estimates shows that the White preferred candidates in 2017 got 86% in a White vs White contest, 86% in a White vs Black contest, and 87% in a White vs Latino contest. In 2016, the White preferred candidates got 85% in a Black vs White contest, 85% in a Black vs Black contest, and 84% in a White vs Latino

contest. In 2015 the White preferred candidates got 82% in a White vs Black contest, 82% in a White vs Latino contest, and 78% in a Latino vs White contest. In 2013 the White preferred candidates got 83% in a Latino vs. Black contest, 80% in a Black vs Black contest, and 80% in a Black vs Black contest.

Again, this same lack of variation in the share of the White vote going to the White preferred candidate is evident in Collingwood and Barreto's preferred BISG estimates. Looking down the list of BISG White estimates, the White preferred candidates in 2017 got 73% in a White vs White contest, 74% in a White vs Black contest, and 77% in a White vs Latino contest. In 2016, the White preferred candidates got 75% in a Black vs White contest, 74% in a Black vs. Black contest, and 72% in a White vs Latino contest. In 2013, the White preferred candidates got 68% in a Latino vs. Black contest, 67% in a Black vs. Black contest, and 66% in a Black vs. Black contest.

Collingwood and Barreto address this same point at length in their most recent report in the portion of their discussion of slating groups on pages 19-23 that relates to the stability of the number of total votes for winning and losing candidates in East Ramapo School Board elections over time. As they note on page 18 of their second report:

> *There are several indications that elections in East Ramapo are characterized by two opposing sets of slating organizations. First, as noted above, our analysis of racial voting patterns shows that the minority candidates who have been elected in East Ramapo have not been the preferred candidates of minority voters. Second, as noted above, the repeated occurrence of two-candidate elections over the past decade, including the presence of two-candidate elections in 13 out of 14 contests for open seats, is often an indicator of organizational control over ballot access. Third, in every contest analyzed, the winning candidates and losing candidates each received similar vote totals and similar degrees of support from different racial groups, which is highly unusual, except in instances of partisan elections with two main parties.*

This conception of the potential influence of slating groups does not relate to the concern with slating groups detailed in the Senate Factors. Senate Factor 4 inquires as to "if there is a candidate slating process, whether members of the minority group have been denied access to that process."[33] Here, Collingwood and Barreto suggest that, rather than one monolithic slating group that functions to restrict minority candidates from entry into the political process, we have two competing voter groups, both of which have, in recent history, supported a mix of white, Black and Latino candidates.[34]

While Collingwood and Barreto do not identify any specific groups, anyone with passing knowledge of the political divide in East Ramapo would recognize that these are the so called 'public school' activists and voters and the so called 'private school' activists and voters.[35] Dr. Cole, in his report, documented this policy dynamic extensively for each election year covered here, and attributes the same stability in election results noted by Collingwood and Barreto directly to the long-standing and continuing dispute between these groups.[36] The existence and intensity of this policy divide explains not only the stability of winning and losing candidates vote totals over these elections, but also the fact, noted above, that these stable patterns are not related to, or influenced by, voter response to the race or ethnicity of the various candidates.

Instead, it seems clear that 'public school' faction, whether white, Black, or Hispanic, support 'public school' candidates, whether white, Black or Hispanic, while the 'private school' faction, whether white, Black or Hispanic, support 'private school' candidates whether white,

[33] S. Rep. No. 97–417, at 29.
[34] Baretto & Collingwood Second Report ("B&C II") at 18-24.
[35] *See* the Complaint in this case at 5-16.
[36] *See* Cole Preliminary Report at 13, 16-17, 20-21, 23-24, 26, 28-31.

Black, or Hispanic.[37] This is precisely what courts have sought to address when distinguishing between minority voters blocked from electing minority candidates due to voting on account of race, on the one hand, and candidates being defeated on account of their lack of majority support on a policy basis, on the other.

Plaintiffs' "Senate Factors" Analysis

Because I conclude that the evidence does not support a finding of Black and Hispanic cohesion and that the evidence does not support a finding of racially polarized voting in the District, I had no reason move beyond the threshold *Gingles* factors to a consideration of the "totality of the circumstances" as outlined in the Senate Factors.

Even though I did not perform an independent analysis of the Senate Factors, I did review Collingwood and Barreto's analysis of those factors. In addition to their statistical analyses, Collingwood and Barreto analyze Senate Factors 3 ("voting practices or procedures that may enhance the opportunity for discrimination against the minority group"), 5 ("discrimination in areas such as education, employment, and health, which hinder their ability to participate effectively in the political process"), and 7 ("the extent to which members of the minority group have been elected to public office in the jurisdiction").[38] They conclude that each factor supports Plaintiffs' claim in this case. I disagree.

In evaluating Senate Factor 3, Collingwood and Barreto mostly rely on a series of studies that identify general patterns associated with a variety of electoral policies and practices.[39] In

[37] Nothing in the additional analysis and discussion by Barreto and Collingwood of material like campaign finance disclosures, the variance in vote totals across elections, or the BISG analysis of signatures on nominating petitions alters this conclusion.

[38] S. Rep. No. 97–417 at 29.

[39] B&C II at 8-15.

particular, they rely on studies that consider how a variety of electoral policies and practices impact minority turnout in certain jurisdictions.[40] Collingwood and Barreto then assume that the general patterns observed in those articles apply in East Ramapo.[41] This may or may not be true; we have no way to know because there is no data presented in their report to demonstrate that any of these general trends would hold in East Ramapo.

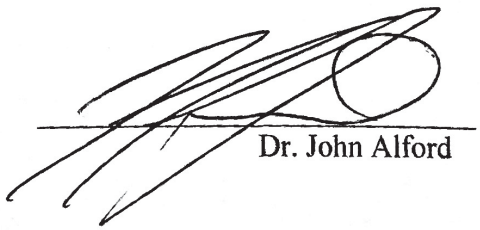
In evaluating Senate Factor 5, "the extent to which minority group members bear the effects of discrimination in areas such as education, employment, and health, which hinder their ability to participate effectively in the political process,"[42] Collingwood and Barreto simply ignore the plain meaning of this Senate Factor. Instead of inquiring into socioeconomic disadvantages in the minority community that might be connected to past or present discrimination, Collingwood and Barreto include a table showing that non-White turnout is lower than white turnout, based on an RxC estimate using CVAP data.[43] They briefly speculate that this lower turnout might be due to a sense of electoral futility, and then turn to a discussion of how lower turnout might lead to reduced minority representation.[44] This is a vaguely circular argument, but more importantly, it is simply not what Senate Factor 5 is concerned with, as it has nothing to do with "the effects of discrimination in areas such as education, employment, and health, which hinder their ability to participate effectively in the political process."[45]

Their reason for not focusing on the actual Senate Factor 5 appraisal is clear. In his report, Dr. Cooper, Plaintiffs' expert demographer, concludes that "Blacks and Latinos in the

[40] *Id.*
[41] *Id.*
[42] S. Rep. No. 97–417 at 29.
[43] B&C II at 25.
[44] *Id.* at 25-26.
[45] S. Rep. No. 97–417 at 29.

District generally outpace their statewide counterparts" with respect to "key socioeconomic measures," that "[non-hispanic] Whites significantly underperform their statewide counterparts across nearly all measures of socioeconomic well-being," and that "within the District, [non-hispanic] Whites trail Blacks across key socioeconomic measures – e.g., poverty rates, median income, and per capita income."[46] This makes it clear that whatever may be its cause, the lower level of minority turnout that Collingwood and Barreto suggest has occurred in East Ramapo elections cannot be attributed to depressed socioeconomic conditions resulting from past discrimination. More broadly, this unusual pattern suggests that the assumption that Collingwood and Barreto make throughout their Senate Factor discussion—that patterns observed elsewhere in the country can simply be assumed to manifest themselves in a like way in East Ramapo—may well be incorrect.

In light of the unusual socioeconomic status of minorities in East Ramapo, the general trends Barreto and Collingwood cite may very well not hold in East Ramapo. Indeed, there is good reason to believe that East Ramapo is different than most other jurisdictions in the country for any number of reasons. That is precisely why the Supreme Court recognized in *Gingles* that the totality of circumstances inquiry mandated under Section 2 requires "an intensely local appraisal" of the relevant jurisdiction.[47] Collingwood and Barreto did not conduct any such local appraisal when considering the Senate Factors.



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[46] Cooper Report at 20-21.
[47] *Thornburg v. Gingles*, 478 U.S. 30, 78 (1986).